



United States Environmental Protection Agency  
One Congress Street, Suite 1100 (HBT)  
Boston, MA 02114-2023

November 26, 2001

Mr. Ed Boyle  
DoN, Northern Division - NAVFAC  
10 Industrial Highway  
Code 1811/EB - Mail Stop 82  
Lester, PA 19113-2090

Re: Draft Work Plan Addendum No. 02 for Soil Vapor Assessment at Building 41 for Remedial Investigation of IR Program Site 16, dated October 20001, at the former Naval Construction Battalion Center (NCBC) Davisville, RI

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Dear Mr. Boyle:

Pursuant to § 7.6 of the Davisville Naval Construction Battalion Center Federal Facility Agreement dated March 23, 1992, as amended (FFA), the Environmental Protection Agency has reviewed the subject document. Comments are enclosed.

EPA welcomes the Navy's building 41 soil vapor study. Please evaluate the enclosed comments and provide responses so that we may continue to pursue source area investigations at this site.

If you have any questions with regard to this letter, please contact me at (617) 918-1384.

Sincerely,

A handwritten signature in cursive script, appearing to read "Christine Williams", is written over the typed name.

Christine A.P. Williams, RPM  
Federal Facilities Superfund Section

Enclosure

cc: Richard Gottlieb, RIDEM  
Dave Barney, CSO  
Bill Brandon, EPA  
Steve DiMattei, EPA  
Marilyn Cohen, ToNK  
Howard Cohen, RIEDC  
Anne Heffron, Enviro-Tech  
Dinalyn Spears-Audette, Narragansett Tribe  
Kathleen Campbell, CDW  
Jim Shultz, EA Engineering, Science and Technology

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## **EPA Comments on Site 16 (Building 41) Soil Vapor Assessment Work Plan**

### **GENERAL COMMENTS**

1. The proposed program includes a large number (up to 70) of soil vapor sample locations. It also proposes sampling at two depth intervals (5 and 10 feet below the ground surface) over an approximate 12.0 to 13.5 foot unsaturated zone. It is not clear, however, how this approach maximizes the investigative resources in assessing a potential source under or in the vicinity of Building 41.

From a review of the data provided in the Site 16 Phase I Remedial Investigation (RI) documents, several USTs were removed in and around Building 41 as part of other programs. However, additional confirmatory work is now warranted. A large area is presently covered with asphalt where former cosmolene tanks were removed. Also, a tank(s) associated with past solvent recovery operations was also removed, and is now covered with asphalt. Several soil borings are needed in each of these areas. Boring locations need to include and specifically target the former tank graves. Continuous split-spoon soil samples should be collected to the top of bedrock at all locations and analyzed for suspected contaminants. The former tanks located along the northern portion of the building, which acted as a cesspool (EBS RIA 81) may also bear further scrutiny as the sludge samples collected during the removal detected noteworthy TPH levels.

Further review of the data provided in the Site 16 Phase I Remedial Investigation (RI) documents also suggests that there does not appear to be a widespread release of volatile organic compounds (VOCs) beneath Building 41. Groundwater contamination, if it does originate from beneath the building, appears to be emanating from a relatively small, defined location. Examination of the groundwater flow directions (south, southeast), if correct, and the contamination in monitoring wells (MW 16-14D and MW 16-15D), if from a source beneath Building 41, would indicate that the source lies close to two areas. These include the former degreasing tank area and the loading area outside the two sliding doors at the southeast corner of the building.

It would appear from comments in the text of the Work Plan and the referenced Site 16 Phase I RI documents that the most likely source is at the location of the former vapor degreasing tank and solvent recovery still. Figure 3 of the Work Plan shows that this location has been clearly identified. A more direct, cost-effective approach to identifying and/or verifying this location as the source of the observed trichloroethylene (TCE) would be to conduct several soil borings at this location. Soil samples should be collected in a continuous manner throughout the soil column beneath the footprint of the former vapor degreaser tank through the unsaturated zone and into the saturated zone to the bedrock. This sampling would establish whether there was a release to soils at this location.

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2. A potential shortcoming of the proposed soil vapor investigation is that it will not identify a source that has migrated to depth beneath the degreaser tank, Cosmolene dipping tank, or the packing/shipping area to at the southeast corner of the building. The Site 16 Phase I RI states that the degreasing tank and equipment were located in a pit beneath the floor slab elevation. That report and this Work Plan do not provide any information as to the "as built" depth dimension of that pit. Any past releases from the bottom of the pit are likely to have entered the groundwater table and migrated vertically downward.

The membrane interface probe (MIP) results presented in the Site 16 Phase I RI (Figure 2-4) did not suggest residual shallow groundwater contamination by CVOCs in the vicinity of Building 41. This would suggest that there is not likely to be a residual source that would be readily detectable beneath Building 41. After almost 50 years of groundwater flushing, it is not likely that significant levels of residual dense, non-aqueous phase liquid, (DNAPL) would exist in the shallow saturated zone. It may be possible that some residual contamination exists at depth that could be contributing to the observed, deep groundwater contamination. However, sampling vapors at the 5 and 10-foot levels alone may not detect this old release.

3. Vertical Conduits: The Navy should assess construction records to ascertain whether piles or other engineered structures may have offered direct routes of contaminant migration into the subsurface. If such features are identified, soil borings should be located here.

## SPECIFIC COMMENTS

4. **Page 2 of 5, First Paragraph after First Bullet:** This paragraph implies that significant chlorinated volatile organic compound (CVOC) contamination exists in deep groundwater all along the south side of Building 41. However, contamination from TCE or degradation products of TCE, that is 1, 2 dichloroethylene (DCE) as opposed to 1,2 dichloroethane (DCA), appear to be limited to the far east and southeast sections of Building 41. Using the limited groundwater contours available (i.e. no shallow or intermediate groundwater elevations) this contamination would appear to have originated at the former degreasing tank or former septic leaching pit areas if it did originate from Building 41 activities. Alternatively, the observed contamination may be the result of surface spills in the vicinity of the loading docks in this area. This section should be revised to reflect the actual data available to date.
5. **Page 2 of 5, Last Bullet:** The Work Plan should define what is meant by "The SVCA will be conducted at *up to* 70 locations." Does this mean that potentially far fewer

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locations will be sampled? If so, what will drive the sample number? In particular, if contaminants are detected at the limits of the grid shown on Figure 3, will the grid be expanded beyond the limit of the grid? A concern is that the observed contamination noted in MW 16-14D and MW 16-15D could be the result of a surface spill near the sliding doors and/or loading dock area at the southeast corner of the building. The procedures should be spelled out in the Work Plan.

6. **Page 3 of 5, First Paragraph:** The Work Plan should explain how sampling the upper 5 and 10 foot depth intervals below the ground surface "will be adequate" to locate releases beneath the building. If the released contaminant is a CVOC (TCE), the contaminant apparently of greatest concentration in deep groundwater, it would appear that the greatest present day residual source would be at depth, probably near or in the bedrock. Given the relatively short distance to the groundwater table, especially below the former degreasing pit, there would not appear to be significant opportunity for lateral spreading of downward migrating CVOC in the unsaturated zone, especially if the release was at a specific location within the former tank footprint.

Fifty years of groundwater flushing would likely also have significantly reduced CVOC contaminants in the upper (shallow) saturated zone. Review of Figure 2-4 of the Site 16 Phase I RI indicates that the MIP did not detect elevated CVOC concentrations in the unsaturated zone or the shallow groundwater around Building 41. Therefore, the Work Plan should include discussion as to how the proposed soil vapor assessment program would provide the expected data with a high degree of certainty.

In this regard, it is not clear why one or more soil borings are not being proposed under this investigative program. Logical potential sources are the former degreasing tank pit and the area outside the sliding doors (loading dock) at the southeast corner of the building. Therefore, a soil boring to the bedrock with continuous split sampling at those locations would appear to provide more direct information as to the presence and vertical distribution of CVOC contamination beneath the building. Likewise, a soil boring within the footprint of the former Cosmolene dipping tanks would facilitate identification of any CVOC contaminants that might have been disposed at that location.

7. **Page 4 of 5, Second Paragraph:** What is the detection limit proposed for the various identified compounds. The Work Plan should include a table with the minimum detection limits for each of the compounds to be searched for.
8. **Figure 3:** Why are no soil vapor assessment locations proposed for within the footprint of the vapor degreasing and Cosmolene dipping pits? Also, the Work Plan states that up to 70 locations will be sampled. If detection of elevated CVOC constituents are noted east or southeast of the building, are there provisions for conducting additional soil vapor

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assessments at points further to the east and/or south? A review of the data provided in the Site 16 Phase I RI suggests that if a release occurred in the area of Building 41 it may just as likely have occurred as a surface release in the vicinity of this packing and shipping area.

9. ***SOP - Section 4.0, Calibration*** - It is recommended that a table that includes the target compound list, the 3 calibration levels, and their reporting limits is included. Please also include in the text (or as a footnote to the table) how the reporting limit for this procedure is determined (i.e. the reporting limit is based on the lowest of the three calibration standards).
10. ***SOP- Section 8.2, Quality Control*** - Please include the acceptance criteria for the duplicates in this section of the SOP.